



# ecology and environment, inc.

Global Environmental Specialists

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## MEMORANDUM

DATE: June 30, 2015

TO: Eric Nuchims, Project Manager, E & E, Seattle, Washington

FROM: Mark Woodke, START-4 Chemist, E & E, Seattle, Washington *MW*

SUBJ: Organic Data Quality Assurance Review, John Day Vapor Response Site, John Day, Oregon

REID: TDD: 15-05-0005 PAN: 1004530.0004.111.02

The data quality assurance review of 4 soil and 7 water samples collected from the John Day Vapor Response site in John Day, Oregon, has been completed. Volatile Organic Compound (VOC) analysis (EPA Method 8260) was performed by TestAmerica, Inc., Tacoma, Washington. All sample analyses were evaluated following EPA's Stage 2B and/or 4 Data Validation Electronic and/or Manual Process (S2B/4VE/M).

The samples were numbered:

15053114	15053115	15053116	15053505	15053506
15053507	15053508	15053601	15053602	15053603
15053604				

### Data Qualifications:

#### 1. Sample Holding Times: Satisfactory.

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on June 1, 2015, were received at the laboratory on June 3, 2015, and were analyzed by June 5, 2015, therefore meeting QC criteria of less than 7 days between collection and analysis for unpreserved water samples. Soil samples 15053505 and 15053506 were received and prepared at the laboratory more than 48 hours after collection, therefore exceeding preparation holding times; associated sample results were qualified as estimated quantities with a low bias (JL or UEL).

#### 2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

#### 3. Initial Calibration: Satisfactory.

All average Relative Response Factors (RRFs) were within the QC limits except vinyl chloride and chloroethane in one or more calibrations; associated positive results were qualified as estimated with a high bias (JH) and sample quantitation limits were rejected (R). All Relative Standard Deviations (RSDs) were within the QC limits.

**4. Continuing Calibration: Satisfactory.**

All RRFs were within the QC limits except the same outliers listed above and bromomethane in the June 5, 2015 (11:34) calibration; associated sample quantitation limits were rejected (R). All % differences were within the QC limits except bromomethane, chloroethane, dichlorofluoromethane, and trichlorofluoromethane with low recoveries in the June 5, 2015 (11:34) calibration and dichlorodifluoromethane, chloromethane, vinyl chloride, bromomethane, and chloroethane with low recoveries and t-butylbenzene, naphthalene, and 1,2,3-trichlorobenzene with high recoveries in the June 4, 2015 (11:36) calibration. No actions were taken based on the high recovery outliers if they were not detected in any associated samples. Positive results associated with high outliers were qualified as estimated quantities with a high bias (JH). Positive results and sample quantitation limits associated with low recovery outliers were qualified as estimated quantities with a low bias (JL or UJL).

**5. Blanks: Satisfactory.**

A method blank was analyzed for each 20 sample batch per matrix. There were no detections in any blank except methylene chloride (26.7 ug/kg) in the soil method blank and ethylbenzene (3.14 ug/L), o-xylene (4.16 ug/L), 1,2,4-trimethylbenzene (4.71 ug/L), m-xylene & p-xylene (10.9 ug/L), methylene chloride (15 ug/L) and toluene (17.1 ug/L) in the continuing calibration blank associated with the soil samples. Associated positive sample results less than five times the associated blank results were qualified as not detected (U).

**6. System Monitoring Compounds (SMCs): Acceptable.**

All SMC recoveries were within QC limits.

**7. Blank Spike (BS)/Blank Spike Duplicate (BSD) Analysis: Satisfactory.**

BS and BSD analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All recoveries were within QC limits except the high 1,2,3-trichlorobenzene recoveries (no actions were taken as 1,2,3-trichlorobenzene was not detected in any associated samples) and the low o-xylene water BS recovery (the associated positive result in sample 15053603-DL2 was qualified as an estimated quantity with a low bias [JL]).

**8. Duplicate Analysis: Acceptable.**

Laboratory spike duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All spike duplicate results were within QC limits.

**9. Internal Standards: Acceptable.**

All internal standards were within  $\pm$  30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

**10. Precision and Bias Determination: Not Performed.**

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

**11. Performance Evaluation Sample Analysis: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

**12. Overall Assessment of Data for Use**

When more than one bias qualifier was applied to a result, the validator used professional judgment to apply only one bias qualifier.

The overall usefulness of the data is based on the criteria outlined in the Site-Specific Sampling Plan and/or Sampling and Quality Assurance Plan, the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical method, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

- U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.
- JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.
- JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.
- JQ - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).
- N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".
- NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

**Client Sample ID:** 15053114

Lab Sample ID: 580-50404-1

Client Matrix: Water

Date Sampled: 06/01/2015 1053

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191201	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662464.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	06/04/2015 1438			Final Weight/Volume:	10 mL
Prep Date:	06/04/2015 1438				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dichlorodifluoromethane	ND	* ^	0.31	2.0
Chloromethane	ND	* ^	0.64	5.0
Vinyl chloride	ND	* ^	0.22	1.0
Bromomethane	ND	* ^	0.27	5.0
Chloroethane	ND	* ^	0.40	5.0
Trichlorofluoromethane	ND	* ^	0.63	3.0
1,1-Dichloroethene	ND	*	0.33	2.0
Methylene Chloride	ND	*	1.3	5.0
trans-1,2-Dichloroethene	ND	*	0.24	1.0
1,1-Dichloroethane	ND	*	0.44	2.0
2,2-Dichloropropane	ND	*	0.68	3.0
cis-1,2-Dichloroethene	ND	*	0.21	1.0
Bromochloromethane	ND	*	0.29	2.0
Chloroform	ND	*	0.17	1.0
1,1,1-Trichloroethane	ND	*	0.58	3.0
Carbon tetrachloride	ND	*	0.55	3.0
1,1-Dichloropropene	ND	*	0.50	3.0
1,2-Dichloroethane	ND	*	0.16	1.0
Trichloroethene	ND	*	0.51	3.0
1,2-Dichloropropene	ND	*	0.18	1.0
Dibromomethane	ND	*	0.14	1.0
Bromodichloromethane	ND	*	0.30	2.0
cis-1,3-Dichloropropene	ND	*	0.20	1.0
trans-1,3-Dichloropropene	ND	*	0.16	1.0
1,1,2-Trichloroethane	ND	*	0.24	1.0
Tetrachloroethene	ND	*	0.75	3.0
1,3-Dichloropropane	ND	*	0.15	1.0
Dibromochloromethane	ND	*	0.20	1.0
1,2-Dibromoethane	ND	*	0.15	1.0
Chlorobenzene	ND	*	0.42	2.0
1,1,1,2-Tetrachloroethane	ND	*	0.48	2.0
1,1,2,2-Tetrachloroethane	ND	*	0.24	1.0
Styrene	ND	*	0.62	5.0
Bromoform	ND	*	0.21	1.0
Isopropylbenzene	8.7	*	0.30	2.0
Bromobenzene	ND	*	0.42	2.0
N-Propylbenzene	28	*	0.57	3.0
1,2,3-Trichloropropane	ND	*	0.41	2.0
2-Chlorotoluene	ND	*	0.52	3.0
1,3,5-Trimethylbenzene	19	*	0.50	3.0
4-Chlorotoluene	ND	*	0.46	2.0
t-Butylbenzene	ND	* ^	0.53	3.0
1,2,4-Trimethylbenzene	87	*	0.50	3.0
sec-Butylbenzene	ND	*	0.53	3.0
1,3-Dichlorobenzene	ND	*	0.44	2.0
4-Isopropyltoluene	0.59	JIA	0.53	3.0

## Analytical Data

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Job Number: 580-50404-1

Client Sample ID: 15053114

Lab Sample ID: 580-50404-1

Client Matrix: Water

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Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191201	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662464.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	06/04/2015 1438			Final Weight/Volume:	10 mL
Prep Date:	06/04/2015 1438				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,4-Dichlorobenzene	ND	*	0.39	2.0
n-Butylbenzene	11	*	0.63	3.0
1,2-Dichlorobenzene	ND	*	0.35	2.0
1,2-Dibromo-3-Chloropropane	ND	*	0.40	2.0
1,2,4-Trichlorobenzene	ND	*	0.23	1.0
1,2,3-Trichlorobenzene	ND	* ^	0.32	2.0
Hexachlorobutadiene	ND	*	0.49	2.0
Naphthalene	14 JH	* ^	0.26	2.0
Methyl tert-butyl ether	ND	*	0.17	1.0
Ethyl t-butyl ether	ND	*	0.34	5.0
Diisopropyl ether	0.18	J Q	0.12	1.0
Tert-amyl methyl ether	0.53	J Q	0.29	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	103		85 - 120
4-Bromofluorobenzene (Surr)	100		75 - 120
Dibromofluoromethane (Surr)	95		85 - 115
Trifluorotoluene (Surr)	104		70 - 136
1,2-Dichloroethane-d4 (Surr)	98		70 - 120

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## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053114

Lab Sample ID: 580-50404-1

Client Matrix: Water

Date Sampled: 06/01/2015 1053

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 580-191201

Instrument ID: TAC043

Prep Method: 5030B

Prep Batch: N/A

Lab File ID: vb001662464.D

Dilution:

1.0

Initial Weight/Volume: 10 mL

Analysis Date: 06/04/2015 1438

Final Weight/Volume: 10 mL

Prep Date: 06/04/2015 1438

#### Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number

Analyte

RT

Est. Result (ug/L)

Qualifier

Tentatively Identified Compound

None

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## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053114

Lab Sample ID: 580-50404-1

Client Matrix: Water

Date Sampled: 06/01/2015 1053

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-192511	Instrument ID:	TAC036
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	hp359232.D
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/18/2015 2148	Run Type:	DL2	Final Weight/Volume:	5 mL
Prep Date:	06/18/2015 2148				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Naphthalene	12	JL HB	0.52	4.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	100		85 - 120
4-Bromofluorobenzene (Surr)	96		75 - 120
Dibromofluoromethane (Surr)	101		85 - 115
Trifluorotoluene (Surr)	89		70 - 136
1,2-Dichloroethane-d4 (Surr)	96		70 - 120

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## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053114

Lab Sample ID: 580-50404-1

Date Sampled: 06/01/2015 1053

Client Matrix: Water

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191201	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662476.D
Dilution:	100			Initial Weight/Volume:	10 mL
Analysis Date:	06/04/2015 1949	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	06/04/2015 1949				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	880	*	42	200
Toluene	1900	*	44	200
Ethylbenzene	160	JHQ	51	300
m-Xylene & p-Xylene	620	*	13	300
o-Xylene	220	*	49	200
Surrogate	%Rec	Qualifier	Acceptance Limits	
Toluene-d8 (Surr)	100		85 - 120	
4-Bromofluorobenzene (Surr)	100		75 - 120	
Dibromofluoromethane (Surr)	96		85 - 115	
Trifluorotoluene (Surr)	101		70 - 136	
1,2-Dichloroethane-d4 (Surr)	102		70 - 120	

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## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053114

Lab Sample ID: 580-50404-1

Client Matrix: Water

Date Sampled: 06/01/2015 1053

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191201	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662476.D
Dilution:	100			Initial Weight/Volume:	10 mL
Analysis Date:	06/04/2015 1949	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	06/04/2015 1949				

#### Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Tentatively Identified Compound		None	

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## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053115

Lab Sample ID: 580-50404-2

Client Matrix: Water

Date Sampled: 06/01/2015 1626

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191201	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662465.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	06/04/2015 1504			Final Weight/Volume:	10 mL
Prep Date:	06/04/2015 1504				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dichlorodifluoromethane	ND	* ^	0.31	2.0
Chloromethane	ND	* ^	0.64	5.0
Vinyl chloride	ND	* ^	0.22	1.0
Bromomethane	ND	* ^	0.27	5.0
Chloroethane	ND	* ^	0.40	5.0
Trichlorofluoromethane	ND	* ^	0.63	3.0
1,1-Dichloroethene	ND	*	0.33	2.0
Methylene Chloride	ND	*	1.3	5.0
trans-1,2-Dichloroethene	ND	*	0.24	1.0
1,1-Dichloroethane	ND	*	0.44	2.0
2,2-Dichloropropane	ND	*	0.68	3.0
cis-1,2-Dichloroethene	ND	*	0.21	1.0
Bromochloromethane	ND	*	0.29	2.0
Chloroform	ND	*	0.17	1.0
1,1,1-Trichloroethane	ND	*	0.58	3.0
Carbon tetrachloride	ND	*	0.55	3.0
1,1-Dichloropropene	ND	*	0.50	3.0
Benzene	ND	*	0.42	2.0
1,2-Dichloroethane	ND	*	0.16	1.0
Trichloroethene	ND	*	0.51	3.0
1,2-Dichloropropane	ND	*	0.18	1.0
Dibromomethane	ND	*	0.14	1.0
Bromodichloromethane	ND	*	0.30	2.0
cis-1,3-Dichloropropene	ND	*	0.20	1.0
Toluene	ND	*	0.44	2.0
trans-1,3-Dichloropropene	ND	*	0.16	1.0
1,1,2-Trichloroethane	ND	*	0.24	1.0
Tetrachloroethene	ND	*	0.75	3.0
1,3-Dichloropropane	ND	*	0.15	1.0
Dibromochloromethane	ND	*	0.20	1.0
1,2-Dibromoethane	ND	*	0.15	1.0
Chlorobenzene	ND	*	0.42	2.0
Ethylbenzene	ND	*	0.51	3.0
1,1,1,2-Tetrachloroethane	ND	*	0.48	2.0
1,1,2,2-Tetrachloroethane	ND	*	0.24	1.0
m-Xylene & p-Xylene	ND	*	0.13	3.0
o-Xylene	ND	*	0.49	2.0
Styrene	ND	*	0.62	5.0
Bromoform	ND	*	0.21	1.0
Isopropylbenzene	ND	*	0.30	2.0
Bromobenzene	ND	*	0.42	2.0
N-Propylbenzene	ND	*	0.57	3.0
1,2,3-Trichloropropane	ND	*	0.41	2.0
2-Chlorotoluene	ND	*	0.52	3.0
1,3,5-Trimethylbenzene	ND	*	0.50	3.0
4-Chlorotoluene	ND	*	0.46	2.0

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053115

Lab Sample ID: 580-50404-2

Client Matrix: Water

Date Sampled: 06/01/2015 1626

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191201	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662465.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	06/04/2015 1504			Final Weight/Volume:	10 mL
Prep Date:	06/04/2015 1504				

Analyte	Result (ug/L)	Qualifier	MDL	RL
t-Butylbenzene	ND	* ^	0.53	3.0
1,2,4-Trimethylbenzene	ND	*	0.50	3.0
sec-Butylbenzene	ND	*	0.53	3.0
1,3-Dichlorobenzene	ND	*	0.44	2.0
4-Isopropyltoluene	ND	*	0.53	3.0
1,4-Dichlorobenzene	ND	*	0.39	2.0
n-Butylbenzene	ND	*	0.63	3.0
1,2-Dichlorobenzene	ND	*	0.35	2.0
1,2-Dibromo-3-Chloropropane	ND	*	0.40	2.0
1,2,4-Trichlorobenzene	ND	*	0.23	1.0
1,2,3-Trichlorobenzene	ND	* ^	0.32	2.0
Hexachlorobutadiene	ND	*	0.49	2.0
Naphthalene	ND	* ^	0.26	2.0
Methyl tert-butyl ether	ND	*	0.17	1.0
Ethyl t-butyl ether	ND	*	0.34	5.0
Diisopropyl ether	ND	*	0.12	1.0
Tert-amyl methyl ether	ND	*	0.29	5.0
Surrogate	%Rec	Qualifier	Acceptance Limits	
Toluene-d8 (Surr)	102		85 - 120	
4-Bromofluorobenzene (Surr)	102		75 - 120	
Dibromofluoromethane (Surr)	96		85 - 115	
Trifluorotoluene (Surr)	105		70 - 136	
1,2-Dichloroethane-d4 (Surr)	100		70 - 120	

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6-20-15

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053115

Lab Sample ID: 580-50404-2

Client Matrix: Water

Date Sampled: 06/01/2015 1626

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191201	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662465.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	06/04/2015 1504			Final Weight/Volume:	10 mL
Prep Date:	06/04/2015 1504				

#### Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Tentatively Identified Compound		None	

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## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053116

Lab Sample ID: 580-50404-3

Client Matrix: Water

Date Sampled: 06/01/2015 2020

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191201	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662466.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	06/04/2015 1530			Final Weight/Volume:	10 mL
Prep Date:	06/04/2015 1530				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dichlorodifluoromethane	ND	* ^	0.31	2.0
Chloromethane	ND	* ^	0.64	5.0
Vinyl chloride	ND	* ^	0.22	1.0
Bromomethane	ND	* ^	0.27	5.0
Chloroethane	ND	* ^	0.40	5.0
Trichlorofluoromethane	ND	* ^	0.63	3.0
1,1-Dichloroethene	ND	*	0.33	2.0
Methylene Chloride	ND	*	1.3	5.0
trans-1,2-Dichloroethene	ND	*	0.24	1.0
1,1-Dichloroethane	ND	*	0.44	2.0
2,2-Dichloropropane	ND	*	0.68	3.0
cis-1,2-Dichloroethene	ND	*	0.21	1.0
Bromochloromethane	ND	*	0.29	2.0
Chloroform	0.21	J	0.17	1.0
1,1,1-Trichloroethane	ND	*	0.58	3.0
Carbon tetrachloride	ND	*	0.55	3.0
1,1-Dichloropropene	ND	*	0.50	3.0
Benzene	ND	*	0.42	2.0
1,2-Dichloroethane	ND	*	0.16	1.0
Trichloroethene	ND	*	0.51	3.0
1,2-Dichloropropane	ND	*	0.18	1.0
Dibromomethane	ND	*	0.14	1.0
Bromodichloromethane	ND	*	0.30	2.0
cis-1,3-Dichloropropene	ND	*	0.20	1.0
Toluene	ND	*	0.44	2.0
trans-1,3-Dichloropropene	ND	*	0.16	1.0
1,1,2-Trichloroethane	ND	*	0.24	1.0
Tetrachloroethene	ND	*	0.75	3.0
1,3-Dichloropropene	ND	*	0.15	1.0
Dibromochloromethane	ND	*	0.20	1.0
1,2-Dibromoethane	ND	*	0.15	1.0
Chlorobenzene	ND	*	0.42	2.0
Ethylbenzene	ND	*	0.51	3.0
1,1,1,2-Tetrachloroethane	ND	*	0.48	2.0
1,1,2,2-Tetrachloroethane	ND	*	0.24	1.0
m-Xylene & p-Xylene	ND	*	0.13	3.0
o-Xylene	ND	*	0.49	2.0
Styrene	ND	*	0.62	5.0
Bromoform	ND	*	0.21	1.0
Isopropylbenzene	ND	*	0.30	2.0
Bromobenzene	ND	*	0.42	2.0
N-Propylbenzene	ND	*	0.57	3.0
1,2,3-Trichloropropane	ND	*	0.41	2.0
2-Chlorotoluene	ND	*	0.52	3.0
1,3,5-Trimethylbenzene	ND	*	0.50	3.0
4-Chlorotoluene	ND	*	0.46	2.0

Mr 6-30-15

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053116

Lab Sample ID: 580-50404-3

Client Matrix: Water

Date Sampled: 06/01/2015 2020

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191201	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662466.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	06/04/2015 1530			Final Weight/Volume:	10 mL
Prep Date:	06/04/2015 1530				

Analyte	Result (ug/L)	Qualifier	MDL	RL
t-Butylbenzene	ND	* ^	0.53	3.0
1,2,4-Trimethylbenzene	ND	*	0.50	3.0
sec-Butylbenzene	ND	*	0.53	3.0
1,3-Dichlorobenzene	ND	*	0.44	2.0
4-Isopropyltoluene	ND	*	0.53	3.0
1,4-Dichlorobenzene	ND	*	0.39	2.0
n-Butylbenzene	ND	*	0.63	3.0
1,2-Dichlorobenzene	ND	*	0.35	2.0
1,2-Dibromo-3-Chloropropane	ND	*	0.40	2.0
1,2,4-Trichlorobenzene	ND	*	0.23	1.0
1,2,3-Trichlorobenzene	ND	* ^	0.32	2.0
Hexachlorobutadiene	ND	*	0.49	2.0
Naphthalene	ND	* ^	0.26	2.0
Methyl tert-butyl ether	ND	*	0.17	1.0
Ethyl t-butyl ether	ND	*	0.34	5.0
Diisopropyl ether	ND	*	0.12	1.0
Tert-amyl methyl ether	ND	*	0.29	5.0
Surrogate	%Rec	Qualifier	Acceptance Limits	
Toluene-d8 (Surr)	100		85 - 120	
4-Bromofluorobenzene (Surr)	100		75 - 120	
Dibromofluoromethane (Surr)	97		85 - 115	
Trifluorotoluene (Surr)	103		70 - 136	
1,2-Dichloroethane-d4 (Surr)	93		70 - 120	

MW 6-30-15

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053116

Lab Sample ID: 580-50404-3

Client Matrix: Water

Date Sampled: 06/01/2015 2020

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191201	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662466.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	06/04/2015 1530			Final Weight/Volume:	10 mL
Prep Date:	06/04/2015 1530				

#### Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Tentatively Identified Compound		None	

MM 630-15

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053505

Lab Sample ID: 580-50404-4

Client Matrix: Solid

% Moisture: 5.8

Date Sampled: 06/01/2015 1010

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 580-191291	Instrument ID: TAC001
Prep Method: 5035	Prep Batch: 580-191190	Lab File ID: F0515007.D
Dilution: 1.0		Initial Weight/Volume: 6.262 g
Analysis Date: 06/05/2015 1339		Final Weight/Volume: 5 mL
Prep Date: 06/03/2015 1200		

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane		ND	H	170	1800
1,1,1-Trichloroethane		ND	H	250	1800
1,1,2,2-Tetrachloroethane		ND	H	100	450
1,1,2-Trichloroethane		ND	H	130	540
1,1-Dichloroethane		ND	H	190	1800
1,1-Dichloroethene		ND	H	220	910
1,1-Dichloropropene		ND	H	240	1800
1,2,3-Trichlorobenzene		ND	H	140	1800
1,2,3-Trichloropropane		ND	H	520	1800
1,2,4-Trichlorobenzene		ND	H	180	1800
1,2,4-Trimethylbenzene		55000	JL	110	1800
1,2-Dibromo-3-Chloropropane		ND	H	120	9100
1,2-Dibromoethane		ND	H	150	730
1,2-Dichlorobenzene		ND	H	540	1800
1,2-Dichloroethane		ND	H	150	730
1,2-Dichloropropane		ND	H	110	540
1,3,5-Trimethylbenzene		7000	JL	130	1800
1,3-Dichlorobenzene		ND	H	480	2700
1,3-Dichloropropane		ND	H	250	1800
1,4-Dichlorobenzene		ND	H	490	2700
2,2-Dichloropropane		ND	H	220	1800
2-Chlorotoluene		ND	H	150	1800
4-Chlorotoluene		ND	H	140	1800
4-Isopropyltoluene		330	JL	130	1800
Benzene		2600	JL	160	730
Bromobenzene		ND	H	110	1800
Bromochloromethane		ND	H	210	1800
Bromodichloromethane		ND	H	64	1800
Bromoform		ND	H	300	1800
Bromomethane		ND	H	610	6400 R
Carbon tetrachloride		ND	H	170	910
Chlorobenzene		ND	H	450	1800
Chloroethane		ND	H	720	1800 ml
Chloroform		ND	H	190	1800
Chloromethane		ND	H	460	4500
cis-1,2-Dichloroethene		ND	H	220	1800
cis-1,3-Dichloropropene		ND	H	82	730
Dibromochloromethane		ND	H	130	910
Dibromomethane		ND	H	590	2700
Dichlorodifluoromethane		ND	H	300	1800
Ethylbenzene		18000	JL	91	1800
Hexachlorobutadiene		ND	H	820	3600
Isopropylbenzene		2000	JL	120	1800
Methyl tert-butyl ether		ND	H	270	1800
Methylene Chloride		550	JHB	520	1100
m-Xylene & p-Xylene		77000	JL	140	1800

MW 632-15

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

**Client Sample ID:** 15053505

Lab Sample ID: 580-50404-4

Client Matrix: Solid

% Moisture: 5.8

Date Sampled: 06/01/2015 1010

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191291	Instrument ID:	TAC001
Prep Method:	5035	Prep Batch:	580-191190	Lab File ID:	F0515007.D
Dilution:	1.0			Initial Weight/Volume:	6.262 g
Analysis Date:	06/05/2015 1339			Final Weight/Volume:	5 mL
Prep Date:	06/03/2015 1200				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Naphthalene		3000	JL	160	1800
n-Butylbenzene		19000	JL	160	1800
N-Propylbenzene		8700	JL	120	1800
o-Xylene		27000	JL	140	1800
sec-Butylbenzene		ND	JL	130	1800
Styrene		ND	JL	110	1800
t-Butylbenzene		250	JL	140	1800
Tetrachloroethene		ND	JL	240	910
Toluene		64000	JL	120	1800
trans-1,2-Dichloroethene		ND	JL	170	1800
trans-1,3-Dichloropropene		ND	JL	320	1800
Trichloroethene		ND	JL	140	1100
Trichlorofluoromethane		ND	JL	270	1800
Vinyl chloride		ND	JL	320	730
Ethyl t-butyl ether		ND	JL	240	1800
Diisopropyl ether		ND	JL	160	1800
Tert-amyl methyl ether		ND	JL	160	1800
Surrogate		%Rec	Qualifier	Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)		98	JL	71 - 136	
4-Bromofluorobenzene (Surr)		99	JL	70 - 120	
Dibromofluoromethane (Surr)		100	JL	75 - 132	
Toluene-d8 (Surr)		107	JL	80 - 120	
Trifluorotoluene (Surr)		98	JL	65 - 140	

MN  
630-15

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053505

Lab Sample ID: 580-50404-4

Client Matrix: Solid

% Moisture: 5.8

Date Sampled: 06/01/2015 1010

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 580-191291

Instrument ID: TAC001

Prep Method: 5035

Prep Batch: 580-191190

Lab File ID: F0515007.D

Dilution: 1.0

Initial Weight/Volume: 6.262 g

Analysis Date: 06/05/2015 1339

Final Weight/Volume: 5 mL

Prep Date: 06/03/2015 1200

#### Tentatively Identified Compounds

#### Number TIC's Found: 0

Cas Number	Analyte	RT	Est. Result (ug/Kg)	Qualifier
	Tentatively Identified Compound		None	H

MW  
6-30-15

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053506

Lab Sample ID: 580-50404-5

Client Matrix: Solid

% Moisture: 23.9

Date Sampled: 06/01/2015 1144

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191291	Instrument ID:	TAC001
Prep Method:	5035	Prep Batch:	580-191190	Lab File ID:	F0515008.D
Dilution:	1.0			Initial Weight/Volume:	4.795 g
Analysis Date:	06/05/2015 1410			Final Weight/Volume:	5 mL
Prep Date:	06/03/2015 1200				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane	ND		H	0.16	0.7
1,1,1-Trichloroethane	ND		H	0.24	1.7
1,1,2,2-Tetrachloroethane	ND		H	0.097	0.42
1,1,2-Trichloroethane	ND		H	0.12	0.51
1,1-Dichloroethane	ND		H	0.18	1.7
1,1-Dichloroethene	ND		H	0.21	0.84
1,1-Dichloropropene	ND		H	0.22	1.7
1,2,3-Trichlorobenzene	ND		H	0.13	1.7
1,2,3-Trichloropropane	ND		H	0.48	1.7
1,2,4-Trichlorobenzene	ND		H	0.16	1.7
1,2,4-Trimethylbenzene	ND		H	0.10	1.7
1,2-Dibromo-3-Chloropropane	ND		H	0.11	8.4
1,2-Dibromoethane	ND		H	0.14	0.67
1,2-Dichlorobenzene	ND		H	0.50	1.7
1,2-Dichloroethane	ND		H	0.14	0.67
1,2-Dichloropropane	ND		H	0.10	0.51
1,3,5-Trimethylbenzene	ND		H	0.12	1.7
1,3-Dichlorobenzene	ND		H	0.44	2.5
1,3-Dichloropropane	ND		H	0.23	1.7
1,4-Dichlorobenzene	ND		H	0.45	2.5
2,2-Dichloropropane	ND		H	0.20	1.7
2-Chlorotoluene	ND		H	0.14	1.7
4-Chlorotoluene	ND		H	0.13	1.7
4-Isopropyltoluene	ND		H	0.12	1.7
Benzene	ND		H	0.15	0.67
Bromobenzene	ND		H	0.10	1.7
Bromochloromethane	ND		H	0.19	1.7
Bromodichloromethane	ND		H	0.059	1.7
Bromoform	ND		H	0.27	1.7
Bromomethane	ND		H	0.56	5.0
Carbon tetrachloride	ND		H	0.16	0.84
Chlorobenzene	ND		H	0.41	1.7
Chloroethane	ND		H	0.67	17.0
Chloroform	ND		H	0.18	1.7
Chloromethane	ND		H	0.43	4.2
cis-1,2-Dichloroethene	ND		H	0.21	1.7
cis-1,3-Dichloropropene	ND		H	0.076	0.67
Dibromochloromethane	ND		H	0.12	0.84
Dibromomethane	ND		H	0.55	2.5
Dichlorodifluoromethane	ND		H	0.27	1.7
Ethylbenzene	ND		H	0.084	1.7
Hexachlorobutadiene	ND		H	0.76	3.4
Isopropylbenzene	ND		H	0.11	1.7
Methyl tert-butyl ether	ND		H	0.25	1.7
Methylene Chloride	0.51	UJL	H	0.48	1.1
m-Xylene & p-Xylene	0.13	UJL	H	0.13	1.7

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

**Client Sample ID:** 15053506

Lab Sample ID: 580-50404-5

Client Matrix: Solid

% Moisture: 23.9

Date Sampled: 06/01/2015 1144

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 580-191291	Instrument ID: TAC001
Prep Method: 5035	Prep Batch: 580-191190	Lab File ID: F0515008.D
Dilution: 1.0		Initial Weight/Volume: 4.795 g
Analysis Date: 06/05/2015 1410		Final Weight/Volume: 5 mL
Prep Date: 06/03/2015 1200		

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Naphthalene		ND	H	0.15	1.7
n-Butylbenzene		ND	H	0.15	1.7
N-Propylbenzene		ND	H	0.11	1.7
o-Xylene		ND	H	0.13	1.7
sec-Butylbenzene		ND	H	0.12	1.7
Styrene		ND	H	0.10	1.7
t-Butylbenzene		ND	H	0.13	1.7
Tetrachloroethene		ND	H	0.22	0.84
Toluene	0.13	UJL	H	0.11	1.7
trans-1,2-Dichloroethene		ND	H	0.16	1.7
trans-1,3-Dichloropropene		ND	H	0.29	1.7
Trichloroethene		ND	H	0.13	1.0
Trichlorofluoromethane		ND	H	0.25	1.7
Vinyl chloride		ND	H	0.30	0.67
Ethyl t-butyl ether		ND	H	0.22	1.7
Diisopropyl ether		ND	H	0.15	1.7
Tert-amyl methyl ether		ND	H	0.15	1.7
<hr/>					
Surrogate		%Rec	Qualifier	Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)		93		71 - 136	
4-Bromofluorobenzene (Surr)		97		70 - 120	
Dibromofluoromethane (Surr)		90		75 - 132	
Toluene-d8 (Surr)		105		80 - 120	
Trifluorotoluene (Surr)		101		65 - 140	

*Mw f-3045*

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053506

Lab Sample ID: 580-50404-5

Client Matrix: Solid

% Moisture: 23.9

Date Sampled: 06/01/2015 1144

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 580-191291

Instrument ID: TAC001

Prep Method: 5035

Prep Batch: 580-191190

Lab File ID: F0515008.D

Dilution: 1.0

Initial Weight/Volume: 4.795 g

Analysis Date: 06/05/2015 1410

Final Weight/Volume: 5 mL

Prep Date: 06/03/2015 1200

#### Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number	Analyte	RT	Est. Result (ug/Kg)	Qualifier
	Tentatively Identified Compound		None	H

MW 6/30/15

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

**Client Sample ID:** 15053507

Lab Sample ID: 580-50404-6

Client Matrix: Solid

% Moisture: 8.0

Date Sampled: 06/01/2015 1238

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C	Analysis Batch: 580-191291	Instrument ID: TAC001
Prep Method: 5035	Prep Batch: 580-191190	Lab File ID: F0515009.D
Dilution: 1.0		Initial Weight/Volume: 5.358 g
Analysis Date: 06/05/2015 1442		Final Weight/Volume: 5 mL
Prep Date: 06/03/2015 1200		

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane		ND		4.2	44
1,1,1-Trichloroethane		ND		6.2	44
1,1,2,2-Tetrachloroethane		ND		2.5	11
1,1,2-Trichloroethane		ND		3.1	13
1,1-Dichloroethane		ND		4.6	44
1,1-Dichloroethene		ND		5.4	22
1,1-Dichloropropene		ND		5.8	44
1,2,3-Trichlorobenzene		ND		3.4	44
1,2,3-Trichloropropane		ND		13	44
1,2,4-Trichlorobenzene		ND		4.3	44
1,2,4-Trimethylbenzene		ND		2.6	44
1,2-Dibromo-3-Chloropropane		ND		2.9	220
1,2-Dibromoethane		ND		3.7	18
1,2-Dichlorobenzene		ND		13	44
1,2-Dichloroethane		ND		3.6	18
1,2-Dichloropropane		ND		2.6	13
1,3,5-Trimethylbenzene		ND		3.2	44
1,3-Dichlorobenzene		ND		12	66
1,3-Dichloropropane		ND		6.1	44
1,4-Dichlorobenzene		ND		12	66
2,2-Dichloropropane		ND		5.3	44
2-Chlorotoluene		ND		3.7	44
4-Chlorotoluene		ND		3.3	44
4-Isopropyltoluene		ND		3.1	44
Benzene		ND		3.9	18
Bromobenzene		ND		2.6	44
Bromochloromethane		ND		5.1	44
Bromodichloromethane		ND		1.5	44
Bromoform		ND		7.2	44
Bromomethane		ND		15	150 mR
Carbon tetrachloride		ND		4.2	22
Chlorobenzene		ND		11	44
Chloroethane		ND		17	140 mR
Chloroform		ND		4.6	44
Chloromethane		ND		11	110
cis-1,2-Dichloroethene		ND		5.4	44
cis-1,3-Dichloropropene		ND		2.0	18
Dibromochloromethane		ND		3.1	22
Dibromomethane		ND		14	66
Dichlorodifluoromethane		ND		7.2	44
Ethylbenzene		ND		2.2	44
Hexachlorobutadiene		ND		20	88
Isopropylbenzene		ND		2.9	44
Methyl tert-butyl ether		ND		6.6	44
Methylene Chloride		18	U	13	28
m-Xylene & p-Xylene		ND		3.3	44

*MwZB*

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053507

Lab Sample ID: 580-50404-6

Client Matrix: Solid

% Moisture: 8.0

Date Sampled: 06/01/2015 1238

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191291	Instrument ID:	TAC001
Prep Method:	5035	Prep Batch:	580-191190	Lab File ID:	F0515009.D
Dilution:	1.0			Initial Weight/Volume:	5.358 g
Analysis Date:	06/05/2015 1442			Final Weight/Volume:	5 mL
Prep Date:	06/03/2015 1200				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Naphthalene		ND		3.9	44
n-Butylbenzene		ND		3.9	44
N-Propylbenzene		ND		2.9	44
o-Xylene		ND		3.3	44
sec-Butylbenzene		ND		3.1	44
Styrene		ND		2.6	44
t-Butylbenzene		ND		3.4	44
Tetrachloroethene		ND		5.8	22
Toluene		ND		2.9	44
trans-1,2-Dichloroethene		ND		4.2	44
trans-1,3-Dichloropropene		ND		7.7	44
Trichloroethene		ND		3.4	26
Trichlorofluoromethane		ND		6.5	44
Vinyl chloride		ND		7.8	18
Ethyl t-butyl ether		ND		5.7	44
Diisopropyl ether		ND		3.9	44
Tert-amyl methyl ether		ND		4.0	44

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	95		71 - 136
4-Bromofluorobenzene (Surr)	97		70 - 120
Dibromofluoromethane (Surr)	90		75 - 132
Toluene-d8 (Surr)	104		80 - 120
Trifluorotoluene (Surr)	100		65 - 140

MW  
63015

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053507

Lab Sample ID: 580-50404-6

Client Matrix: Solid

% Moisture: 8.0

Date Sampled: 06/01/2015 1238

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 580-191291

Instrument ID: TAC001

Prep Method: 5035

Prep Batch: 580-191190

Lab File ID: F0515009.D

Dilution: 1.0

Initial Weight/Volume: 5.358 g

Analysis Date: 06/05/2015 1442

Final Weight/Volume: 5 mL

Prep Date: 06/03/2015 1200

#### Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number	Analyte	RT	Est. Result (ug/Kg)	Qualifier
	Tentatively Identified Compound		None	

MW  
6/30/15

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053508

Lab Sample ID: 580-50404-7

Date Sampled: 06/01/2015 1430

Client Matrix: Solid

% Moisture: 7.9

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191291	Instrument ID:	TAC001
Prep Method:	5035	Prep Batch:	580-191190	Lab File ID:	F0515010.D
Dilution:	1.0			Initial Weight/Volume:	4.672 g
Analysis Date:	06/05/2015 1513			Final Weight/Volume:	5 mL
Prep Date:	06/03/2015 1200				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1,2-Tetrachloroethane		ND		4.7	50
1,1,1-Trichloroethane		ND		7.0	50
1,1,2,2-Tetrachloroethane		ND		2.9	12
1,1,2-Trichloroethane		ND		3.5	15
1,1-Dichloroethane		ND		5.2	50
1,1-Dichloroethene		ND		6.1	25
1,1-Dichloropropene		ND		6.6	50
1,2,3-Trichlorobenzene		ND		3.9	50
1,2,3-Trichloropropane		ND		14	50
1,2,4-Trichlorobenzene		ND		4.9	50
1,2,4-Trimethylbenzene		ND		3.0	50
1,2-Dibromo-3-Chloropropane		ND		3.2	250
1,2-Dibromoethane		ND		4.2	20
1,2-Dichlorobenzene		ND		15	50
1,2-Dichloroethane		ND		4.1	20
1,2-Dichloropropane		ND		3.0	15
1,3,5-Trimethylbenzene		ND		3.6	50
1,3-Dichlorobenzene		ND		13	75
1,3-Dichloropropane		ND		6.9	50
1,4-Dichlorobenzene		ND		13	75
2,2-Dichloropropane		ND		6.0	50
2-Chlorotoluene		ND		4.2	50
4-Chlorotoluene		ND		3.7	50
4-Isopropyltoluene		ND		3.5	50
Benzene		ND		4.4	20
Bromobenzene		ND		3.0	50
Bromochloromethane		ND		5.7	50
Bromodichloromethane		ND		1.7	50
Bromoform		ND		8.1	50
Bromomethane		ND		17	170 mR
Carbon tetrachloride		ND		4.7	25
Chlorobenzene		ND		12	50
Chloroethane		ND		20	500 mR
Chloroform		ND		5.2	50
Chloromethane		ND		13	120
cis-1,2-Dichloroethene		ND		6.1	50
cis-1,3-Dichloropropene		ND		2.2	20
Dibromochloromethane		ND		3.5	25
Dibromomethane		ND		16	75
Dichlorodifluoromethane		ND		8.1	50
Ethylbenzene		ND		2.5	50
Hexachlorobutadiene		ND		23	100
Isopropylbenzene		ND		3.2	50
Methyl tert-butyl ether		ND		7.5	50
Methylene Chloride		22	U	14	31
m-Xylene & p-Xylene		ND		3.7	50

mw 6-30-15

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053508

Lab Sample ID: 580-50404-7

Client Matrix: Solid

% Moisture: 7.9

Date Sampled: 06/01/2015 1430

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191291	Instrument ID:	TAC001
Prep Method:	5035	Prep Batch:	580-191190	Lab File ID:	F0515010.D
Dilution:	1.0			Initial Weight/Volume:	4.672 g
Analysis Date:	06/05/2015 1513			Final Weight/Volume:	5 mL
Prep Date:	06/03/2015 1200				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Naphthalene		ND		4.4	50
n-Butylbenzene		ND		4.4	50
N-Propylbenzene		ND		3.2	50
o-Xylene		ND		3.7	50
sec-Butylbenzene		ND		3.5	50
Styrene		ND		3.0	50
t-Butylbenzene		ND		3.9	50
Tetrachloroethene		ND		6.6	25
Toluene		ND		3.2	50
trans-1,2-Dichloroethene		ND		4.7	50
trans-1,3-Dichloropropene		ND		8.7	50
Trichloroethene		ND		3.9	30
Trichlorofluoromethane		ND		7.4	50
Vinyl chloride		ND		8.9	20
Ethyl t-butyl ether		ND		6.5	50
Diisopropyl ether		ND		4.4	50
Tert-amyl methyl ether		ND		4.5	50

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	89		71 - 136
4-Bromofluorobenzene (Surr)	96		70 - 120
Dibromofluoromethane (Surr)	89		75 - 132
Toluene-d8 (Surr)	101		80 - 120
Trifluorotoluene (Surr)	95		65 - 140

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

**Client Sample ID:** 15053508

Lab Sample ID: 580-50404-7

Client Matrix: Solid

% Moisture: 7.9

Date Sampled: 06/01/2015 1430

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 580-191291

Instrument ID: TAC001

Prep Method: 5035

Prep Batch: 580-191190

Lab File ID: F0515010.D

Dilution: 1.0

Initial Weight/Volume: 4.672 g

Analysis Date: 06/05/2015 1513

Final Weight/Volume: 5 mL

Prep Date: 06/03/2015 1200

#### Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number	Analyte	RT	Est. Result (ug/Kg)	Qualifier
	Tentatively Identified Compound		None	

MW 6/30/15

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

**Client Sample ID:** 15053601

Lab Sample ID: 580-50404-8

Client Matrix: Water

Date Sampled: 06/01/2015 1410

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191201	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662467.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	06/04/2015 1555			Final Weight/Volume:	10 mL
Prep Date:	06/04/2015 1555				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dichlorodifluoromethane	ND	* ^	0.31	2.0
Chloromethane	ND	* ^	0.64	5.0
Vinyl chloride	ND	* ^	0.22	1.0
Bromomethane	ND	* ^	0.27	5.0
Chloroethane	ND	* ^	0.40	5.0
Trichlorofluoromethane	ND	* ^	0.63	3.0
1,1-Dichloroethene	ND	*	0.33	2.0
Methylene Chloride	ND	*	1.3	5.0
trans-1,2-Dichloroethene	ND	*	0.24	1.0
1,1-Dichloroethane	ND	*	0.44	2.0
2,2-Dichloropropane	ND	*	0.68	3.0
cis-1,2-Dichloroethene	ND	*	0.21	1.0
Bromoform	ND	*	0.29	2.0
1,1,1-Trichloroethane	ND	*	0.17	1.0
Carbon tetrachloride	ND	*	0.58	3.0
1,1-Dichloropropene	ND	*	0.55	3.0
Benzene	1.2	J/MQ	0.50	3.0
1,2-Dichloroethane	ND	*	0.42	2.0
Trichloroethene	ND	*	0.16	1.0
1,2-Dichloropropane	ND	*	0.51	3.0
Dibromomethane	ND	*	0.18	1.0
Bromodichloromethane	ND	*	0.14	1.0
cis-1,3-Dichloropropene	ND	*	0.30	2.0
Toluene	17	*	0.20	1.0
trans-1,3-Dichloropropene	ND	*	0.44	2.0
1,1,2-Trichloroethane	ND	*	0.16	1.0
Tetrachloroethene	ND	*	0.24	1.0
1,3-Dichloropropane	ND	*	0.75	3.0
Dibromochloromethane	ND	*	0.15	1.0
1,2-Dibromoethane	ND	*	0.20	1.0
Chlorobenzene	ND	*	0.15	1.0
Ethylbenzene	2.3	J/MQ	0.42	2.0
1,1,1,2-Tetrachloroethane	ND	*	0.51	3.0
1,1,2,2-Tetrachloroethane	ND	*	0.48	2.0
m-Xylene & p-Xylene	9.6	*	0.24	1.0
o-Xylene	3.5	*	0.13	3.0
Styrene	ND	*	0.49	2.0
Bromoform	ND	*	0.62	5.0
Isopropylbenzene	ND	*	0.21	1.0
Bromobenzene	ND	*	0.30	2.0
N-Propylbenzene	ND	*	0.42	2.0
1,2,3-Trichloropropane	ND	*	0.57	3.0
2-Chlorotoluene	ND	*	0.41	2.0
1,3,5-Trimethylbenzene	ND	*	0.52	3.0
4-Chlorotoluene	ND	*	0.50	3.0
			0.46	2.0

MM 63015

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053601

Lab Sample ID: 580-50404-8

Client Matrix: Water

Date Sampled: 06/01/2015 1410

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191201	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662467.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	06/04/2015 1555			Final Weight/Volume:	10 mL
Prep Date:	06/04/2015 1555				

Analyte	Result (ug/L)	Qualifier	MDL	RL
t-Butylbenzene	ND	* ^	0.53 ✓	3.0
1,2,4-Trimethylbenzene	1.1	J GA	0.50	3.0
sec-Butylbenzene	ND	*	0.53 ✓	3.0
1,3-Dichlorobenzene	ND	*	0.44	2.0
4-Isopropyltoluene	ND	*	0.53	3.0
1,4-Dichlorobenzene	ND	*	0.39	2.0
n-Butylbenzene	ND	*	0.63	3.0
1,2-Dichlorobenzene	ND	*	0.35	2.0
1,2-Dibromo-3-Chloropropane	ND	*	0.40	2.0
1,2,4-Trichlorobenzene	ND	*	0.23	1.0
1,2,3-Trichlorobenzene	ND	* ^	0.32	2.0
Hexachlorobutadiene	ND	*	0.49	2.0
Naphthalene	ND	* ^	0.26	2.0
Methyl tert-butyl ether	ND	*	0.17	1.0
Ethyl t-butyl ether	ND	*	0.34	5.0
Diisopropyl ether	ND	*	0.12	1.0
Tert-amyl methyl ether	ND	*	0.29 ✓	5.0
Surrogate	%Rec	Qualifier	Acceptance Limits	
Toluene-d8 (Surr)	102		85 - 120	
4-Bromofluorobenzene (Surr)	101		75 - 120	
Dibromofluoromethane (Surr)	93		85 - 115	
Trifluorotoluene (Surr)	105		70 - 136	
1,2-Dichloroethane-d4 (Surr)	98		70 - 120	

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053601

Lab Sample ID: 580-50404-8

Client Matrix: Water

Date Sampled: 06/01/2015 1410

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191201	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662467.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	06/04/2015 1555			Final Weight/Volume:	10 mL
Prep Date:	06/04/2015 1555				

#### Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Tentatively Identified Compound		None	

MW  
63015

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053602

Lab Sample ID: 580-50404-9

Client Matrix: Water

Date Sampled: 06/01/2015 1600

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191201	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662468.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	06/04/2015 1622			Final Weight/Volume:	10 mL
Prep Date:	06/04/2015 1622				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dichlorodifluoromethane	ND	* ^	0.31	2.0
Chloromethane	ND	* ^	0.64	5.0
Vinyl chloride	ND	* ^	0.22	1.0
Bromomethane	ND	* ^	0.27	5.0
Chloroethane	ND	* ^	0.40	5.0
Trichlorofluoromethane	ND	* ^	0.63	3.0
1,1-Dichloroethene	ND	*	0.33	2.0
Methylene Chloride	ND	*	1.3	5.0
trans-1,2-Dichloroethene	ND	*	0.24	1.0
1,1-Dichloroethane	ND	*	0.44	2.0
2,2-Dichloropropane	ND	*	0.68	3.0
cis-1,2-Dichloroethene	ND	*	0.21	1.0
Bromochloromethane	ND	*	0.29	2.0
Chloroform	ND	*	0.17	1.0
1,1,1-Trichloroethane	ND	*	0.58	3.0
Carbon tetrachloride	ND	*	0.55	3.0
1,1-Dichloropropene	ND	*	0.50	3.0
Benzene	ND	*	0.42	2.0
1,2-Dichloroethane	ND	*	0.16	1.0
Trichloroethene	ND	*	0.51	3.0
1,2-Dichloropropane	ND	*	0.18	1.0
Dibromomethane	ND	*	0.14	1.0
Bromodichloromethane	ND	*	0.30	2.0
cis-1,3-Dichloropropene	ND	*	0.20	1.0
Toluene	ND	*	0.44	2.0
trans-1,3-Dichloropropene	ND	*	0.16	1.0
1,1,2-Trichloroethane	ND	*	0.24	1.0
Tetrachloroethene	ND	*	0.75	3.0
1,3-Dichloropropene	ND	*	0.15	1.0
Dibromochloromethane	ND	*	0.20	1.0
1,2-Dibromoethane	ND	*	0.15	1.0
Chlorobenzene	ND	*	0.42	2.0
Ethylbenzene	ND	*	0.51	3.0
1,1,1,2-Tetrachloroethane	ND	*	0.48	2.0
1,1,2,2-Tetrachloroethane	ND	*	0.24	1.0
m-Xylene & p-Xylene	ND	*	0.13	3.0
o-Xylene	ND	*	0.49	2.0
Styrene	ND	*	0.62	5.0
Bromoform	ND	*	0.21	1.0
Isopropylbenzene	ND	*	0.30	2.0
Bromobenzene	ND	*	0.42	2.0
N-Propylbenzene	ND	*	0.57	3.0
1,2,3-Trichloropropane	ND	*	0.41	2.0
2-Chlorotoluene	ND	*	0.52	3.0
1,3,5-Trimethylbenzene	ND	*	0.50	3.0
4-Chlorotoluene	ND	*	0.46	2.0

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053602

Lab Sample ID: 580-50404-9

Client Matrix: Water

Date Sampled: 06/01/2015 1600

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191201	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662468.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	06/04/2015 1622			Final Weight/Volume:	10 mL
Prep Date:	06/04/2015 1622				

Analyte	Result (ug/L)	Qualifier	MDL	RL
t-Butylbenzene	ND	* ^	0.53	3.0
1,2,4-Trimethylbenzene	ND	*	0.50	3.0
sec-Butylbenzene	ND	*	0.53	3.0
1,3-Dichlorobenzene	ND	*	0.44	2.0
4-Isopropyltoluene	ND	*	0.53	3.0
1,4-Dichlorobenzene	ND	*	0.39	2.0
n-Butylbenzene	ND	*	0.63	3.0
1,2-Dichlorobenzene	ND	*	0.35	2.0
1,2-Dibromo-3-Chloropropane	ND	*	0.40	2.0
1,2,4-Trichlorobenzene	ND	*	0.23	1.0
1,2,3-Trichlorobenzene	ND	* ^	0.32	2.0
Hexachlorobutadiene	ND	*	0.49	2.0
Naphthalene	ND	* ^	0.26	2.0
Methyl tert-butyl ether	ND	*	0.17	1.0
Ethyl t-butyl ether	ND	*	0.34	5.0
Diisopropyl ether	ND	*	0.12	1.0
Tert-amyl methyl ether	ND	*	0.29	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	97		85 - 120
4-Bromofluorobenzene (Surr)	102		75 - 120
Dibromofluoromethane (Surr)	98		85 - 115
Trifluorotoluene (Surr)	102		70 - 136
1,2-Dichloroethane-d4 (Surr)	96		70 - 120

MM 6/21/15

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053602

Lab Sample ID: 580-50404-9

Client Matrix: Water

Date Sampled: 06/01/2015 1600

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 580-191201

Instrument ID: TAC043

Prep Method: 5030B

Prep Batch: N/A

Lab File ID: vb001662468.D

Dilution: 1.0

Initial Weight/Volume: 10 mL

Analysis Date: 06/04/2015 1622

Final Weight/Volume: 10 mL

Prep Date: 06/04/2015 1622

#### Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Tentatively Identified Compound		None	

Jun 30-15

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053603

Lab Sample ID: 580-50404-10

Client Matrix: Water

Date Sampled: 06/01/2015 1650

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191201	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662469.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	06/04/2015 1647			Final Weight/Volume:	10 mL
Prep Date:	06/04/2015 1647				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dichlorodifluoromethane	ND	* ^	0.31	2.0
Chloromethane	ND	* ^	0.64	5.0
Vinyl chloride	ND	* ^	0.22	1.0
Bromomethane	ND	* ^	0.27	5.0
Chloroethane	ND	* ^	0.40	5.0
Trichlorofluoromethane	ND	* ^	0.63	3.0
1,1-Dichloroethene	ND	*	0.33	2.0
Methylene Chloride	ND	*	1.3	5.0
trans-1,2-Dichloroethene	ND	*	0.24	1.0
1,1-Dichloroethane	ND	*	0.44	2.0
2,2-Dichloropropane	ND	*	0.68	3.0
cis-1,2-Dichloroethene	ND	*	0.21	1.0
Bromoform	ND	*	0.29	2.0
1,1,1-Trichloroethane	ND	*	0.17	1.0
Carbon tetrachloride	ND	*	0.58	3.0
1,1-Dichloropropene	ND	*	0.55	3.0
Benzene	65	*	0.50	3.0
1,2-Dichloroethane	ND	*	0.42	2.0
Trichloroethene	ND	*	0.16	1.0
1,2-Dichloropropane	ND	*	0.51	3.0
Dibromomethane	ND	*	0.18	1.0
Bromodichloromethane	ND	*	0.14	1.0
cis-1,3-Dichloropropene	ND	*	0.30	2.0
Toluene	5.6	*	0.20	1.0
trans-1,3-Dichloropropene	ND	*	0.44	2.0
1,1,2-Trichloroethane	ND	*	0.16	1.0
Tetrachloroethene	ND	*	0.24	1.0
1,3-Dichloropropene	ND	*	0.75	3.0
Dibromochloromethane	ND	*	0.15	1.0
1,2-Dibromoethane	ND	*	0.20	1.0
Chlorobenzene	ND	*	0.15	1.0
Ethylbenzene	ND	*	0.42	2.0
1,1,1,2-Tetrachloroethane	ND	*	0.51	3.0
1,1,2,2-Tetrachloroethane	ND	*	0.48	2.0
m-Xylene & p-Xylene	31	*	0.24	1.0
Styrene	ND	*	0.13	3.0
Bromoform	ND	*	0.62	5.0
Isopropylbenzene	ND	*	0.21	1.0
Bromobenzene	ND	*	0.30	2.0
N-Propylbenzene	ND	*	0.42	2.0
1,2,3-Trichloropropane	ND	*	0.57	3.0
2-Chlorotoluene	ND	*	0.41	2.0
1,3,5-Trimethylbenzene	0.84	J/mG	0.52	3.0
4-Chlorotoluene	ND	*	0.50	3.0
t-Butylbenzene	ND	*	0.46	2.0
		^	0.53	3.0

*MW 6-30-15*

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053603

Lab Sample ID: 580-50404-10

Client Matrix: Water

Date Sampled: 06/01/2015 1650

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191201	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662469.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	06/04/2015 1647			Final Weight/Volume:	10 mL
Prep Date:	06/04/2015 1647				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,2,4-Trimethylbenzene	1.6	J LQ	0.50	3.0
sec-Butylbenzene	ND	*	0.53	3.0
1,3-Dichlorobenzene	ND	*	0.44	2.0
4-Isopropyltoluene	ND	*	0.53	3.0
1,4-Dichlorobenzene	ND	*	0.39	2.0
n-Butylbenzene	ND	*	0.63	3.0
1,2-Dichlorobenzene	ND	*	0.35	2.0
1,2-Dibromo-3-Chloropropane	ND	*	0.40	2.0
1,2,4-Trichlorobenzene	ND	*	0.23	1.0
1,2,3-Trichlorobenzene	ND	* ^	0.32	2.0
Hexachlorobutadiene	ND	*	0.49	2.0
Methyl tert-butyl ether	ND	*	0.17	1.0
Ethyl t-butyl ether	ND	*	0.34	5.0
Diisopropyl ether	ND	*	0.12	1.0
Tert-amyl methyl ether	ND	*	0.29	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	101		85 - 120
4-Bromofluorobenzene (Surr)	102		75 - 120
Dibromofluoromethane (Surr)	94		85 - 115
Trifluorotoluene (Surr)	102		70 - 136
1,2-Dichloroethane-d4 (Surr)	98		70 - 120

MM  
6/20/15

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053603

Lab Sample ID: 580-50404-10

Client Matrix: Water

Date Sampled: 06/01/2015 1650

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191201	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662469.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	06/04/2015 1647			Final Weight/Volume:	10 mL
Prep Date:	06/04/2015 1647				

#### Tentatively Identified Compounds

#### Number TIC's Found: 0

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Tentatively Identified Compound		None	

MW  
630-15

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053603

Lab Sample ID: 580-50404-10

Client Matrix: Water

Date Sampled: 06/01/2015 1650

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191404	Instrument ID:	TAC036
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	hp358997.D
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/06/2015 1631	Run Type:	DL	Final Weight/Volume:	5 mL
Prep Date:	06/06/2015 1631				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Naphthalene	3.5	J Q	0.52	4.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	107		85 - 120
4-Bromofluorobenzene (Surr)	95		75 - 120
Dibromofluoromethane (Surr)	101		85 - 115
Trifluorotoluene (Surr)	100		70 - 136
1,2-Dichloroethane-d4 (Surr)	81		70 - 120

MW  
63015

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

**Client Sample ID:** 15053603

Lab Sample ID: 580-50404-10

Client Matrix: Water

Date Sampled: 06/01/2015 1650

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191404	Instrument ID:	TAC036
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	hp358997.D
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/06/2015 1631	Run Type:	DL	Final Weight/Volume:	5 mL
Prep Date:	06/06/2015 1631				

#### Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Tentatively Identified Compound		None	

*MW  
6-3-15*

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053603

Lab Sample ID: 580-50404-10

Date Sampled: 06/01/2015 1650

Client Matrix: Water

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191533	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662546.D
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	06/08/2015 1716	Run Type:	DL2	Final Weight/Volume:	10 mL
Prep Date:	06/08/2015 1716				

Analyte	Result (ug/L)	Qualifier	MDL	RL
o-Xylene	160	100 JL	4.9	20

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	102		85 - 120
4-Bromofluorobenzene (Surr)	102		75 - 120
Dibromofluoromethane (Surr)	98		85 - 115
Trifluorotoluene (Surr)	103		70 - 136
1,2-Dichloroethane-d4 (Surr)	93		70 - 120

MW  
6-30-15

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

**Client Sample ID:** 15053604

Lab Sample ID: 580-50404-11

Client Matrix: Water

Date Sampled: 06/01/2015 1810

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191201	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662471.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	06/04/2015 1739			Final Weight/Volume:	10 mL
Prep Date:	06/04/2015 1739				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dichlorodifluoromethane	ND	* ^	0.31	2.0
Chloromethane	ND	* ^	0.64	5.0
Vinyl chloride	ND	* ^	0.22	1.0
Bromomethane	ND	* ^	0.27	5.0
Chloroethane	ND	* ^	0.40	5.0
Trichlorofluoromethane	ND	* ^	0.63	3.0
1,1-Dichloroethene	ND	*	0.33	2.0
Methylene Chloride	ND	*	1.3	5.0
trans-1,2-Dichloroethene	ND	*	0.24	1.0
1,1-Dichloroethane	ND	*	0.44	2.0
2,2-Dichloropropane	ND	*	0.68	3.0
cis-1,2-Dichloroethene	ND	*	0.21	1.0
Bromoform	ND	*	0.29	2.0
1,1,1-Trichloroethane	ND	*	0.17	1.0
Carbon tetrachloride	ND	*	0.58	3.0
1,1-Dichloropropene	ND	*	0.55	3.0
Benzene	ND	*	0.50	3.0
1,2-Dichloroethane	ND	*	0.42	2.0
Trichloroethene	ND	*	0.16	1.0
1,2-Dichloropropane	ND	*	0.51	3.0
Dibromomethane	ND	*	0.18	1.0
Bromodichloromethane	ND	*	0.14	1.0
cis-1,3-Dichloropropene	ND	*	0.30	2.0
Toluene	ND	*	0.20	1.0
trans-1,3-Dichloropropene	ND	*	0.44	2.0
1,1,2-Trichloroethane	ND	*	0.16	1.0
Tetrachloroethene	ND	*	0.24	1.0
1,3-Dichloropropene	ND	*	0.75	3.0
Dibromochloromethane	ND	*	0.15	1.0
1,2-Dibromoethane	ND	*	0.20	1.0
Chlorobenzene	ND	*	0.15	2.0
Ethylbenzene	ND	*	0.42	2.0
1,1,1,2-Tetrachloroethane	ND	*	0.51	3.0
1,1,2,2-Tetrachloroethane	ND	*	0.48	2.0
m-Xylene & p-Xylene	ND	*	0.24	1.0
o-Xylene	ND	*	0.13	3.0
Styrene	ND	*	0.49	2.0
Bromoform	ND	*	0.62	5.0
Isopropylbenzene	ND	*	0.21	1.0
Bromobenzene	ND	*	0.30	2.0
N-Propylbenzene	ND	*	0.42	2.0
1,2,3-Trichloropropane	ND	*	0.57	3.0
2-Chlorotoluene	ND	*	0.41	2.0
1,3,5-Trimethylbenzene	ND	*	0.52	3.0
4-Chlorotoluene	ND	*	0.50	2.0
	ND	*	0.46	2.0

Mr 6/23/15

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053604

Lab Sample ID: 580-50404-11

Client Matrix: Water

Date Sampled: 06/01/2015 1810

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	580-191201	Instrument ID:	TAC043
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	vb001662471.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	06/04/2015 1739			Final Weight/Volume:	10 mL
Prep Date:	06/04/2015 1739				

Analyte	Result (ug/L)	Qualifier	MDL	RL
t-Butylbenzene	ND	* ^	0.53	3.0
1,2,4-Trimethylbenzene	ND	*	0.50	3.0
sec-Butylbenzene	ND	*	0.53	3.0
1,3-Dichlorobenzene	ND	*	0.44	2.0
4-Isopropyltoluene	ND	*	0.53	3.0
1,4-Dichlorobenzene	ND	*	0.39	2.0
n-Butylbenzene	ND	*	0.63	3.0
1,2-Dichlorobenzene	ND	*	0.35	2.0
1,2-Dibromo-3-Chloropropane	ND	*	0.40	2.0
1,2,4-Trichlorobenzene	ND	*	0.23	1.0
1,2,3-Trichlorobenzene	ND	* ^	0.32	2.0
Hexachlorobutadiene	ND	*	0.49	2.0
Naphthalene	ND	* ^	0.26	2.0
Methyl tert-butyl ether	ND	*	0.17	1.0
Ethyl t-butyl ether	ND	*	0.34	5.0
Diisopropyl ether	ND	*	0.12	1.0
Tert-amyl methyl ether	ND	*	0.29	5.0
Surrogate	%Rec	Qualifier	Acceptance Limits	
Toluene-d8 (Surr)	101		85 - 120	
4-Bromofluorobenzene (Surr)	101		75 - 120	
Dibromofluoromethane (Surr)	95		85 - 115	
Trifluorotoluene (Surr)	104		70 - 136	
1,2-Dichloroethane-d4 (Surr)	99		70 - 120	

MW  
630ft

## Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-50404-1

Client Sample ID: 15053604

Lab Sample ID: 580-50404-11

Client Matrix: Water

Date Sampled: 06/01/2015 1810

Date Received: 06/03/2015 0925

### 8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 580-191201

Instrument ID: TAC043

Prep Method: 5030B

Prep Batch: N/A

Lab File ID: vb001662471.D

Dilution: 1.0

Initial Weight/Volume: 10 mL

Analysis Date: 06/04/2015 1739

Final Weight/Volume: 10 mL

Prep Date: 06/04/2015 1739

#### Tentatively Identified Compounds

Number TIC's Found: 0

Cas Number	Analyte	RT	Est. Result (ug/L)	Qualifier
	Tentatively Identified Compound		None	

MW  
6/30/15